
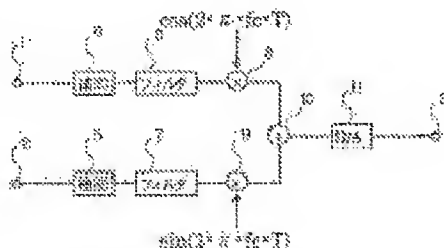


**DIGITAL QUADRATURE MODULATOR AND DEMODULATOR****Publication number:** JP11163953 (A)**Publication date:** 1999-06-18**Inventor(s):** IWAKI YOSHIYUKI; ONISHI MAKOTO**Applicant(s):** HITACHI ELECTRONICS**Classification:**- **international:** *H04L27/20; H04L27/22; H04L27/20; H04L27/22; (IPC1-7): H04L27/20; H04L27/22*- **European:****Application number:** JP19970324647 19971126**Priority number(s):** JP19970324647 19971126**Also published as:** JP3953164 (B2)**Abstract of JP 11163953 (A)**

**PROBLEM TO BE SOLVED:** To prevent gain difference, phase difference and a DC offset from occurring between in-phase component data and orthogonal component data by providing one D/A converter and executing a digital signal processing in sampling frequency conversion and an orthogonal modulation. **SOLUTION:** Input data is converted into a sampling frequency by an interpolator 4, sent to a filter 6 and, moreover, transmitted to a multiplier 8. In the same way, orthogonal component data of the sampling frequency is inputted to the interpolator 5 with an input terminal 2 and orthogonal component data which is converted into the sampling frequency is transmitted to the multiplier 9 through the interpolator 5 and a filter 7.; In-phase component data converted into the sampling frequency is multiplied by  $\cos(2\pi \cdot f_c T)$  by the multiplier 8 and orthogonal data is multiplied by  $\sin(2\pi \cdot f_c T)$  by the multiplier 9. Then, they are added by an adder 10, transmitted to the D/A converter 11, converted into analog data and outputted as orthogonally converted data through an output terminal 3.



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